

IN THE CLAIMS

1 1. (Currently Amended) A method for designing a system on a target device utilizing a
2 programmable logic device (PLD) with an electronic automation design tool (EDA), comprising:
3 having the EDA tool determine a first location on the PLD to place a user defined logic
4 region in response to user specified constraints for placement of the user defined logic region;
5 and
6 having the EDA tool determine a second location to place the user defined logic region,
7 wherein the second location is determined independent of the user specified constraints for
8 placement; and
9 determining routing resources to allocate to user specified signals on the target device in
10 response to user specified routing constraints.

1 2. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2 determine the second location is performed in response to the first location not satisfying design
3 parameters.

1 3. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2 determine the second location is performed in response to the first location not satisfying the user
3 specified constraints.

1 4. (Previously Presented) A method for designing a system on a target device utilizing a
2 programmable logic device (PLD), comprising:
3 determining a first location on the PLD to place a user defined logic region in response
4 to user specified constraints for placement of the user defined logic region; and
5 determining a second location to place the user defined logic region, wherein the second
6 location is determined independent of the user specified constraints for placement in response to
7 having a threshold number of first locations generated.

1 5. (Previously Presented) The method of Claim 1, wherein having the EDA tool
2 determine the second location is performed in response to a triggering event.

1 6. (Previously Presented) The method of Claim 1, further comprising determining
2 positions to place components within user defined logic regions on the target device.

1 7. (Previously Presented) The method of Claim 6, wherein determining positions to
2 place the components is an iterative procedure that includes:
3 selecting positions;
4 evaluating the positions with a cost function; and
5 accepting the positions if the cost function yields a desired value.

1 8. (Previously Presented) The method of Claim 6, wherein determining the positions
2 comprises removing constraints associated with the user defined logic regions.

1 9. (Cancelled)

1 10. (Currently Amended) The method of Claim 19, wherein determining routing
2 resources is an iterative procedure that includes:
3 selecting routing resources;
4 determining whether routing resource selections satisfy the user specified routing
5 constraints; and
6 re-selecting routing resources if the routing resource selections do not satisfy the user
7 specified routing constraints.

1 11. (Currently Amended) The method of Claim 19, wherein re-selecting the routing
2 resources comprises determining routing resources to allocate to the user specified signals on the
3 PLD by removing the user specified routing constraints.

1 12. (Currently Amended) A method for positioning components of a system onto a
2 target device utilizing a programmable logic device (PLD) using an electronic design automation
3 tool, comprising:

4 having the EDA tool determine a first location on the PLD to place a user defined logic
5 region in response to user specified constraints for placement of the user defined logic region;

6 determining whether the user specified constraint is a soft constraint in response to the
7 system not satisfying timing; and

8 having the EDA tool determine a second location to place the user defined logic region,
9 wherein the second location is determined independent of the user specified constraints for
10 placement if the user specified constraint is a soft constraint, and in response to having a
11 threshold number of first locations determined.

1 13. (Previously Presented) The method of Claim 12, wherein determining the first
2 location to place the user defined logic region comprises:
3 assigning an initial location for the user defined logic region;
4 moving the user defined logic region to a new location; and
5 evaluating a cost function associated with the user defined logic region in the new
6 location.

1 14. (Original) The method of Claim 13, wherein evaluating the cost function comprises:
2 determining a timing of the system associated with the user defined logic region in the
3 new location; and
4 determining routing resources requirements associated with the user defined logic region
5 in the new location.

1 15. (Previously Presented) The method of Claim 12, further comprising determining
2 possible locations to place a component in the user defined logic region that includes:
3 assigning an initial location for the component in the user defined logic region; and
4 evaluating a cost function as the user defined logic region and the component are moved.

1 16. (Previously Presented) The method of Claim 15, further comprising determining
2 possible locations to move the component from the possible locations to place the component
3 independent of the constraints associated with the user defined logic region.

1 17. (Previously Presented) The method of Claim 16, wherein determining possible
2 locations to move the component is performed in response to the possible locations not satisfying
3 user specified constraints.

1 18. (Cancelled)

1 19. (Currently Amended) A method for designing a system on a programmable logic
2 device (PLD) using an electronic design automation (EDA) tool, comprising:
3 having the EDA tool determine routing strategies for routing signals on the PLD in
4 response to user specified routing constraints that pertain to categories of routing resources to
5 use by selecting routing resources for a user specified signal on the PLDs in response to the user

1 specified routing constraints, and selecting routing resources for a non-user specified signal on
2 the PLDs without utilizing the user specified routing constraints; and
3 having the EDA tool determine additional routing strategies for routing the signals on the
4 PLD where the additional routing strategies are independent of the user specified routing
5 constraints.

1 20. (Cancelled)

1 21. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals comprises selecting routing resources for the user specified
3 signal on the PLDs independent of the user specified routing constraints.

1 22. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals is performed in response to the routing strategies not satisfying
3 user specified routing constraints.

1 23. (Original) The method of Claim 19, wherein determining additional routing
2 strategies for routing the signals is performed in response to the routing strategies not satisfying
3 design parameters.

1 24. (Currently Amended) ~~The method of Claim 19, wherein determining additional~~
2 ~~routing strategies for routing the signal is performed~~ A method for designing a system on a
3 programmable logic device (PLD) using an electronic design automation (EDA) tool,
4 comprising:

5 having the EDA tool determine routing strategies for routing signals on the PLD in
6 response to user specified routing constraints that pertain to categories of routing resources to
7 use; and

8 having the EDA tool determine additional routing strategies in response to a threshold
9 number of routing strategies being determined.

1 25. (Cancelled)

1 26. (Cancelled)

1 27. (Cancelled)

1 28. (Previously Presented) A machine-readable medium having stored thereon
2 sequences of instructions, the sequences of instructions including instructions which, when
3 executed by a processor, causes the processor to perform:
4 determining a first location on a programmable logic device (PLD) to place a user
5 defined logic region in response to user specified constraints for placement of the user defined
6 logic region; and
7 determining a second location to place the user defined logic region wherein the second
8 location is determined independent of the user specified constraints for placement in response to
9 having a threshold number of first locations determined.

1 29. (Cancelled)

1 30. (Currently Amended) The machine-readable medium of Claim 28, further
2 comprising determining locations to place components within user defined logic regions on the
3 target device.

1 31. (Previously Presented) The machine-readable medium of Claim 30, further
2 comprising determining locations to place the components on the target device by removing
3 constraints associated with the user defined logic regions.

1 32. (Currently Amended) ~~The machine-readable medium of Claim 25, further~~
2 ~~comprising~~ A machine-readable medium having stored thereon sequences of instructions, the
3 sequences of instructions including instructions which, when executed by a processor, causes the
4 processor to perform:
5 determining a first location on a programmable logic device (PLD) to place a user
6 defined logic region in response to user specified constraints for placement of the user defined
7 logic region; and
8 determining a second location to place the user defined logic region wherein the second
9 location is determined independent of the user specified constraints for placement; and
10 determining routing resources to allocate to user specified signals on the target device in
11 response to user specified routing constraints.

1 33. (Previously Presented) The machine-readable medium of Claim 32, further
2 comprising ignoring the user specified routing constraints.